

UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF MICHIGAN  
SOUTHERN DIVISION

EVERLIGHT ELECTRONICS CO., LTD.  
and EMCORE CORPORATION,

Plaintiffs,

Civil Action No.12-cv-11758  
HONORABLE GERSHWIN A. DRAIN

v.

NICHIA CORPORATION, and  
NICHIA AMERICA CORPORATION,

Defendants and  
Counter-plaintiffs,

v.

EVERLIGHT ELECTRONICS CO., LTD.,  
EMCORE CORPORATION, and  
EVERLIGHT AMERICAS, INC.,

Counter-Defendants,  
Defendant.

/

**OPINION AND ORDER DENYING DEFENDANTS' MOTION FOR JUDGMENT  
AS A MATTER OF LAW OF INFRINGEMENT [#525], DENYING PLAINTIFFS'  
MOTION FOR JUDGMENT AS A MATTER OF LAW REGARDING  
ANTICIPATION OF CLAIMS 2 AND 3 OF U.S. PATENT NO. 5,998,925 [#554],  
AND DENYING DEFENDANTS' MOTION FOR JUDGMENT AS A  
MATTER OF LAW OF VALIDITY AND/OR FOR A NEW TRIAL [#556]**

**I. INTRODUCTION**

Everlight Electronics Co., Ltd. and Emcore Corporation (collectively, "Everlight") commenced this suit seeking a declaratory judgment of non-infringement, invalidity, and unenforceability of United States Patent No. 5,998,925 (the "'925 Patent") and United States Patent No. 7,531,960 (the "'960 Patent"), which patents were issued to Nichia Corporation and/or Nichia

America Corporation (collectively, “Nichia”). The patents-in-suit relate to light emitting diode (“LED”) technology, and the parties are business competitors in the manufacture and supply of white LEDs. The suit was brought pursuant to the Declaratory Judgment Act, 28 U.S.C. §§ 2201, 2202, and the patent laws of the United States, 35 U.S.C. § 1 et seq. Nichia filed counterclaims against Everlight for direct and indirect infringement of the ‘925 and ‘960 Patents.

From April 7, 2015 to April 21, 2015, the first phase of the trial in this matter (“Phase I”) was conducted before a jury. On April 21, 2015 and April 22, 2015, the jury deliberated, and the jury’s verdict was announced on April 22, 2015. According to the Verdict Form for Phase I of this case (the “Verdict Form”), the jury unanimously determined that:

1. Everlight did not prove by clear and convincing evidence that claims 2 and 3 of the ‘925 patent are invalid due to anticipation;
2. Everlight proved by clear and convincing evidence that claims 2, 3 and 5 of the ‘925 patent are invalid due to obviousness;
3. Everlight did not prove by clear and convincing evidence that claims 2, 3 and 5 of the ‘925 patent are invalid due to lack of enablement;
4. Everlight proved by clear and convincing evidence that claims 2, 14 and 19 of the ‘960 patent are invalid due to obviousness; and
5. Everlight proved by clear and convincing evidence that claims 2, 14 and 19 of the ‘960 patent are invalid due to lack of enablement.

Further, because the jury determined that each of the six claims at issue were invalid for at least one reason, the jury did not have to (and the jury did not) proceed to consider or determine any of Nichia’s infringement claims against Everlight. In light of the jury’s findings, the Court entered a judgment in favor of Everlight’s claims that claims 2, 3 and 5 of the ‘925 Patent and claims 2, 14, and 19 of the ‘960 Patent are invalid. *See* Dkt. No. 524, PgID 42974. Additionally, based on the jury’s findings, the Court entered a judgment in favor of Everlight dismissing Nichia’s

counterclaims that claims 2, 3 and 5 of the ‘925 Patent and claims 2, 14, and 19 of the ‘960 Patent are infringed. *See* Dkt. No. 524, PgID 42975.

The jury was not tasked with addressing Everlight’s declaratory judgment claims that the ‘925 Patent and the ‘960 Patent are unenforceable due to inequitable conduct. Instead, this Court conducted a bench trial on June 15, 16 and 18, 2015 (“Phase II”) to address Everlight’s claims of inequitable conduct. On October 20, 2015, the Court ruled in favor of Nichia and against Everlight on Everlight’s claim for unenforceability due to inequitable conduct with respect to both the ‘925 Patent and the ‘960 Patent. *See* Dkt. No. 601.

Presently before the Court are three motions:

- A. Nichia’s Motion for Judgment as a Matter of Law (“JMOL”) of Infringement [#525];
- B. Everlight’s Motion for Judgment as a Matter of Law Regarding Anticipation of Claims 2 and 3 of the ‘925 Patent [#554]; and
- C. Nichia’s Motion for Judgment as a Matter of Law of Validity and/or for a New Trial [#556].

These matters are fully briefed, and the Court finds that oral argument will not aid in their resolution. Accordingly, these matters will be resolved on the briefs submitted. *See* E.D. Mich. L.R. 7.1(f)(2). For the reasons that follow, all three motions are DENIED.

## **II. FACTUAL BACKGROUND**

The ‘925 Patent is entitled “Light Emitting Device Having a Nitride Compound Semiconductor and a Phosphor Containing a Garnet Fluorescent Material.” The ‘925 Patent names Yoshinori Shimizu, Kensho Sakano, Yasunobu Noguchi, and Toshio Moriguchi as inventors. The application for the ‘925 Patent was filed with the United States Patent and Trademark Office (“USPTO”) on July 29, 1997 via United States Patent Application No. 08/902,725. The ‘925 Patent

issued on December 7, 1999 to assignee Nichia Kagaku Kogyo Kabushiki Kaisha (d/b/a/ Nichia Corporation).

The ‘960 Patent is entitled “Light Emitting Device with Blue Light LED and Phosphor Components.” The ‘960 Patent names Yoshinori Shimizu, Kensho Sakano, Yasunobu Noguchi, and Toshio Moriguchi as inventors. The application for the ‘960 Patent was filed with the USPTO on March 5, 2007 via United States Patent Application no. 11/682,014. The ‘960 Patent issued on May 12, 2009 to assignee Nichia Corporation.

Both the ‘925 Patent and the ‘960 Patent (collectively, “the patents-in-suit”) relate to LEDs that implement a gallium-nitride-based semiconductor with a phosphor. The ‘925 Patent focuses on the use of yttrium-aluminum-garnet (“YAG”) phosphors in LEDs to create a wide range of white light. The Abstract of the ‘925 Patent states as follows:

The white light emitting diode comprising a light emitting component using a semiconductor as a light emitting layer and a phosphor which absorbs a part of light emitted by the light emitting component and emits light of wavelength different from that of the absorbed light, wherein the light emitting layer of the light emitting component is a nitride compound semiconductor and the phosphor contains garnet fluorescent materials activated with cerium which contains at least one element selected from the group consisting of Y, Lu, Sc, La, Gd and Sm, and at least one element selected from the group consisting of Al, Ga and In and, and [sic] is subject to less deterioration of emission characteristic even when used with high luminance for a long period of time.

The Abstract of the ‘960 Patent claims priority to the ‘925 Patent and concerns how the phosphor is distributed in the resin covering the semiconductor component. The ‘960 Abstract states as follows:

A light emitting device includes a light emitting component; and a phosphor capable of absorbing a part of light emitted by the light emitting component and emitting light of a wavelength different from that of the absorbed light. A straight line connecting a point of chromaticity corresponding to a peak of the spectrum generated by the light emitting component and a point of chromaticity corresponding to a peak

of the spectrum generated by the phosphor is disposed along with the black body radiation locus in the chromaticity diagram.

Thus, the patents-in-suit cover the use of particular phosphors in white LED technology enabling efficient, long-lasting, high luminance LEDs in a wide variety of applications, including computer and cellular telephone displays.

### **III. LAW & ANALYSIS**

#### **A. Standard of Review**

##### *1. Rule 50 Motion for Judgment as a Matter of Law*

“Judgment as a matter of law is appropriate when ‘viewing the evidence in the light most favorable to the non-moving party, there is no genuine issue of material fact for the jury, and reasonable minds could come to but one conclusion in favor of the moving party.’” *Tisdale v. Fed. Express Corp.*, 415 F.3d 516, 527 (6th Cir. 2005) (internal citations omitted). In reviewing a Rule 50(b) motion, “the evidence should be viewed in the light most favorable to the party against whom the motion is made, and that party given the benefit of all reasonable inferences.” *Parker v. Gen. Extrusions, Inc.*, 491 F.3d 596, 602 (6th Cir. 2007) (citation omitted). However, while the evidence of record must generally be considered in the light most favorable to the nonmoving party, “when an expert opinion is not supported by sufficient facts to validate it in the eyes of the law . . . it cannot support a jury’s verdict.” *Brooke Gp. Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 242 (1993). A Rule 50(b) motion should be granted only “if ‘reasonable minds could not come to a conclusion other than one favoring the movant.’” *Id.* (citation omitted).

##### *2. New Trial*

District courts have broad discretion whether to grant a new trial. *Am. Seating Co. v. USSC Group, Inc.*, 2006 U.S. Dist. LEXIS 60128, at \*\*8-9 (W.D. Mich. Aug. 24, 2006); Fed. R. Civ. P.

59(a). Rule 59 encompasses a wide range of grounds, including errors of law and unfair prejudice to a litigant. *Am. Seating*, U.S. Dist. LEXIS 60128, at \*9. A new trial is warranted on errors in the verdict form if the questions “mislead or confuse the jury, or if they inaccurately frame the issues to be resolved by the jury.” *Chirco v. Charter Oak Homes, Inc.*, 2008 U.S. Dist. LEXIS 29764, at \*\*24-25 (E.D. Mich. Apr. 11, 2008).

#### **B. Nichia’s Motion for JMOL of Infringement**

In its Motion for JMOL of Infringement, Nichia moves the Court to amend its Judgment to hold that Everlight infringes the asserted claims of the patents-in-suit, *i.e.*, claims 2, 3, and 5 of the ‘925 Patent and claims 2, 14, and 19 of the ‘960 Patent (the “Asserted Claims”). Most significantly, Nichia asserts that the unrebutted testimony of its expert conclusively establishes Everlight’s infringement of the Asserted Claims. Therefore, Nichia argues, no reasonable jury could conclude that Everlight does not infringe those claims.

The Court finds that Nichia’s Motion for JMOL of Infringement is governed by the principle that “a judgment of invalidity necessarily moots the issue of infringement.” *TypeRight Keyboard Corp. v. Microsoft Corp.*, 374 F.3d 1151, 1157 (Fed. Cir. 2004) (citing *Sandt Tech., Ltd. v. Resco Metal & Plastics Corp.*, 264 F.3d 1344, 1356 (Fed. Cir. 2001), and *Weatherchem Corp. v. J.L. Clark, Inc.*, 163 F.3d 1326, 1335 (Fed. Cir. 1998)). Thus, in a case such as this one, where a jury finds that the patents-in-suit are invalid, there is no need for the jury to reach the issue of infringement.

Nichia’s argues that “infringement and invalidity are fundamentally distinct issues that must be separately decided.” *Commil USA LLC v. Cisco Sys.*, \_\_\_ U.S. \_\_\_, 135 S.Ct. 1920, 1929-30 (2015) (“Validity and infringement are distinct issues, bearing different burdens, different presumptions,

and different evidence.”); *Cardinal Chem. Co. v. Morton Int’l Inc.*, 508 U.S. 83 (1993). Neither *Cardinal Chem.* nor *Commil*, however, addresses the issue before the Court, *i.e.*, whether a finding of invalidity renders moot the issue of infringement. As the *TypeRight* court observed, the holding in *Cardinal Chem.* was that “a judgment of non-infringement does not necessarily moot validity issues on appeal.” *Typeright*, 374 F.3d at 1157 (citing *Cardinal Chem.*, 508 U.S. at 98). In other words, the holding in *Cardinal Chem.* is the converse of what Nichia has asserted, and that holding was reached “because ‘a determination of infringement applies only to a specific accused product or process,’ whereas ‘invalidity operates as a complete defense to infringement for any product, forever.’” *TypeRight*, 374 F.3d at 1157 (quoting *Weatherchem*, 163 F.3d at 1335-36). Accordingly, the Court rejects Nichia’s argument that the Court erred in not requiring that the jury decide the issue of infringement.

Nichia’s contention that *TypeRight* is inapposite to the issue at hand is also misplaced. The fact that *TypeRight* concerned the Federal Circuit’s dismissing a cross-appeal of the district court’s dismissal of a counterclaim for non-infringement does not make the ruling any less relevant in this case. In both instances, a finding of invalidity precludes a finding of infringement. As the Federal Circuit held in *Weatherchem*, a judgment “that claims are invalid eliminates, as a practical matter, the need to consider on [a motion for JMOL] whether those claims are infringed, even if the accused infringer has filed a counterclaim for a declaratory judgment of noninfringement.” *Weatherchem*, 163 F.3d at 1335. Moreover, as the *Commil* court recognized, “[t]o be sure, *if* at the end of the day, *an act that would have been an infringement or an inducement to infringe pertains to a patent that is shown to be invalid, there is no patent to be infringed.*” *Commil*, 135 S.Ct. at 1929 (emphasis added).

Therefore, as the jury in this case concluded that the patents-in-suit are invalid, there are no patents for the jury to find infringed. Accordingly, the Court denies Nichia's Motion for JMOL of Infringement.

### C. Everlight's Motion for JMOL Regarding Anticipation of Claims 2 and 3 of the '925 Patent

In its Motion for JMOL Regarding Anticipation, Everlight states:

In order to preserve its rights for appeal and pursuant to Rule 50(b), Everlight . . . moves the Court to enter judgment as a matter of law that claims 2 and 3 of [the '925 Patent] are anticipated under 35 U.S.C. § 102, and thus are invalid. At trial, Nichia . . . did not dispute that two . . . art references disclosed every element of claims 2 and 3 of the '925 [P]atent. Those references are S. Nakamura, *Present performance of InGaN based blue/green/yellow LEDs*, SPIE Vol. 3002 (Feb. 1997) ("Nakamura SPIE") (P-138) . . . and P. Schlotter, R. Schmidt, and J. Schneider, *Luminescence conversion of blue light emitting diodes*, Applied Physics A: Materials Science & Processing, Vol. 64, p. 417-418 (received Feb. 6, 1997; published Apr. 1, 1997) ("Schlotter") (P-137) . . . Instead, Nichia argued that the references are not prior art because Nichia alleges that claims 2 and 3 are entitled to an earlier priority date. Nichia also made two subsidiary arguments: (1) that the Nakamura SPIE reference was the work of the inventors, and (2) that Schlotter was not an enabling reference. Nichia failed to carry its burden as to any of these arguments.

Everlight argues, in part, as it did in its motion for summary judgment, that claims 2 and 3 of the '925 Patent cannot rely on any of the priority applications because they do not recite *in haec verba* (*i.e.*, verbatim) the words "a nitride compound semiconductor represented by the formula:  $\text{In}_i\text{Ga}_j\text{Al}_k\text{N}$  where  $0 \leq i, 0 \leq j, 0 \leq k$ , and  $i+j+k = 1$ ," used in claim 1 of the '925 Patent to describe the blue LED semiconductor.<sup>1</sup> For the reasons set forth below, the Court is not persuaded that Everlight is entitled to judgment as a matter of law that claims 2 and 3 of the '925 Patent are invalid as anticipated.

<sup>1</sup>In deciding Everlight's motion for summary judgment, the Court held that "the issues raised by Everlight are factually complex and not amenable to resolution on summary judgment." Dkt. No. 437, Pg ID 35413.

“A determination that a patent is invalid as anticipated under 35 U.S.C. § 102 requires that a prior art reference disclose every limitation of the claimed invention, either explicitly or inherently.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 481 F.3d 1371, 1381 (Fed. Cir. 2007). As set forth in the jury instructions given by the Court,

Everlight has put at issue certain references alleged to be prior art to certain claims of the ‘925 Patent that are dated earlier than the filing date of the ‘925 Patent. To establish entitlement to the priority date of any of the foreign priority applications, Nichia must present evidence of entitlement to such priority. The ultimate burden of proving invalidity remains with Everlight.

In deciding whether claims 2, 3, and 5 of the ‘925 Patent are entitled to the priority of any of the five Japanese priority applications, you must consider the descriptions of the priority applications from the viewpoint of a person having ordinary skill in the field of technology of the patent when the application was filed. Claims 2, 3, and 5 of the ‘925 Patent are entitled to the priority of a Japanese priority application if a person having ordinary skill reading the priority application would have recognized that it describes the full scope of the claimed invention as it is claimed in claims 2, 3 and 5 of the ‘925 Patent and that the inventors actually possessed that full scope by the filing date of the priority application.

Instruction No. 13. Thus, once Everlight came forth with evidence of a *prima facie* case of invalidity of anticipation, Nichia had “*to come forward with evidence* to the contrary,” *PowerOasis, Inc. v. Tmobile USA, Inc.*, 522 F.3d 1199, 1305 (Fed. Cir. 2008) (emphasis added), or evidence “that the prior art does not actually anticipate or, as was attempted in this case, that it is not prior art because the asserted claim is entitled to the benefit of a filing date prior to the alleged prior art.” *Technology Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1327 (Fed. Cir. 2008). Then, if Nichia did so, Everlight had the ultimate burden of proving invalidity because that burden remains with the party challenging the validity of the patent, *i.e.*, Everlight. *See, e.g., Id.*; Jury Instruction 13.<sup>2</sup>

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<sup>2</sup>As the Court stated when deciding which disputed jury instructions to give, *Technology Licensing Corp.* “modified” the *PowerOasis* case upon which Everlight relies. *See* Nichia Resp., Ex. D, at 47-48 (“The *Technology Licensing Corp.* [decision] really modified *Power Oasis* to get to a point where Nichia’s instruction, I think, is more appropriate dealing with the burden of

There is no dispute that Everlight set forth a *prima facie* case of invalidity of anticipation. Everlight argues that Nichia has not satisfied its burden of coming forward with evidence to prove entitlement to claim priority of the ‘925 Patent. Claims for priority to an earlier-filed foreign patent application are governed by 35 U.S.C. § 119. Section 119 requires that each foreign application must satisfy the requirements of 35 U.S.C. § 112, which in turn requires that an application both enable a person of ordinary skill in the art to practice the invention and provide an adequate written description of the invention. *See, e.g., In re Ziegler*, 992 F.2d 1197, 1200 (Fed. Cir. 1993). Priority is a fact-based analysis. *Amkor Tech., Inc. v. ITC*, 692 F.3d 1250, 1254 (Fed. Cir. 2012) (priority determination is “based upon underlying factual determinations”). Thus, the priority inquiry focuses on the asserted claims as compared to the actual disclosures of the specification of the earlier foreign applications; expert testimony “cannot override the objective content of [the] documents.” *Anascape Ltd. v. Nintendo of America, Inc.*, 601 F.3d 1333, 1338 (Fed. Cir. 2008).

To satisfy the written description requirement, “the disclosure of the earlier application, the parent, must reasonably convey to one of skill in the art that the inventor possessed the later-claimed subject matter at the time the parent application was filed.” *Tronzo v. Biomet, Inc.*, 156 F.3d 1154, 1158 (Fed. Cir. 1998). This “requires that the written description [of the priority application] actually or inherently disclosed the claim element.” *PowerOasis, Inc.*, 522 F.3d at 1306. To be inherent, the claimed subject matter must be necessarily present in the disclosure even if it is not explicitly mentioned. *Id.; Motorola Mobility LLC v. ITC*, 737 F.3d 1345, 1350 (Fed. Cir. 2013) (“Inherency requires more than probabilities or possibilities”). Whether the priority applications satisfy the “written description” requirement is a question of fact. *Technology Licensing Corp.*, 545

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proof, than Everlight’s. So, I’m going to give Nichia’s proposed instruction on prior art and priority.”).

F.3d at 1332. “[T]he primary consideration is *factual* and depends on the nature of the invention and the amount of knowledge imparted to those skilled in the art by the disclosure.” *Union Oil Co. v. Atlantic Richfield Co.*, 208 F.3d 989, 996 (Fed. Cir. 2000) (quotation omitted; emphasis in original).

The factual inquiry considers both what is expressly and inherently disclosed by the priority applications to a person of skill in the art at the time of filing the application. *EnOcean GmbH v. Face Intern. Corp.*, 742 F.3d 955, 960-62 (Fed. Cir. 2014); *Star Scientific, Inc. v. R.J. Reynolds Tobacco Co.*, 655 F.3d 1364, 1371-72 (Fed. Cir. 2011). Significantly, however, “[t]he written description requirement does not require the applicant to describe [in the priority application] exactly the subject matter claimed.” *Union Oil Co.*, 208 F.3d at 997 (citations and quotations omitted). See also *Purdue Pharma L.P. v. Paulding, Inc.*, 230 F.3d 1320, 1323 (Fed. Cir. 2000) (“[T]he disclosure as originally filed does not have to provide *in haec verba* support for the claimed subject matter at issue.”). See also, *Utter v. Hiraga*, 845 F.2d 993, 998 (Fed. Cir. 1988) (“A specification may, within the meaning of 35 U.S.C. § 112 para. 1, contain a written description of a broadly claimed invention without describing all species that [the] claim encompasses.”).

Nichia contends, and the Court agrees, that Nichia met its burden of “com[ing] forward with evidence to prove entitlement to claim priority to an earlier filing date” by presenting the following facts at trial concerning the relevant chronology prior to July 29, 1997, the date the ‘925 Patent was filed.

<b>Date</b>	<b>Document</b>	<b>Description</b>
July 29, 1996	JP8-198585	First Priority Application (JP1)
Sep. 13, 1996	Nikkei Newspaper	First public disclosure of invention
Nov. 29, 1996	Bando Paper	First publication of invention
Dec. 27, 1996	JP8-3559004	Fourth Priority Application (JP4)
Feb. 1997	Nakamura SPIE	Article describing work of Inventors
Mar. 31, 1997	JP8-081010	Fifth Priority Application (JP5)
Apr. 1, 1997	Schlotter Reference	Two-Page Disclosure

As Nichia notes, its expert, Dr. Schubert, also gave detailed, limitation-by-limitation testimony as to why the claims were entitled to the priority dates for each of JP1, JP4, and JP5. Nichia Resp., Ex. A, at 42-59. Significantly, Dr. Schubert also ultimately concluded that each of claims 2, 3 and 5 “finds support in each of the Japanese priority applications” (JP1, JP4 and JP5). *Id.* at 60. The Court disagrees with Everlight’s claim that Prof. Schubert was not questioned based on the proper legal standard because he was asked his expert opinion concerning “support” in the Priority Applications. In fact, the priority/written description requirement is often articulated in this manner, as the Federal Circuit recognized in a case that Everlight cites as authority (albeit for another proposition). *See Anascape*, 601 F.3d at 1335 (internal quotations omitted) (“To obtain the benefit of the filing date of a parent application, the claims of the later-filed application must be supported by the written description in the parent”).

The Court also observes that it is undisputed that each of the first four priority applications identified at trial predated Nakamura SPIE, and all five priority applications predated Schlotter. Thus, as Nichia argues, the jury could have eliminated: (a) Nakamura SPIE as a prior art reference by concluding that JP1 and/or JP4 supported the claims (thus eliminating the need to even consider the evidence that Nakamura SPIE discloses the work of the inventors), and (b) Schlotter as a prior art reference by concluding that JP1, JP4 and/or JP5 supported the claims (thereby eliminating any need to consider whether Schlotter is enabling, as it must be to anticipate). Moreover, Dr. Schubert based his opinions on his knowledge of the art and the express disclosures of the applications. For example, Dr. Schubert testified that each of the priority applications at JP1, JP4, and JP5 independently provided written support for the semiconductor limitation. Nichia Resp., Ex. A at 46-47, 51, 56. Thus, the Court finds that this is not a case where the testimony was conclusory and

contradicted by the priority applications, as Everlight argues. Citing *Anascape Ltd. v. Nintendo of America, Inc.*, 601 F.3d 1333, 1339 (Fed. Cir. 2008) (citation omitted) (“Dr. Howe’s conclusion is not supported by any evidence at all, and cannot override the objective content of these documents.”).

Everlight also contends that Dr. Schubert’s testimony should be disregarded because his “testimony directly contradicted the Court’s claim construction, which renders the testimony irrelevant as a matter of law.” EL Mtn., Pg ID 44716 (citing *Liquid Dynamics Corp. v. Vaughan Co.*, 449 F.3d 1209, 1224 n.2 (Fed. Cir. 2006)). The Court construed the semiconductor limitation as follows: “comprises a nitride compound semiconductor represented by the formula  $In_iGa_jAl_kN$ , where i is greater than or equal to zero, j is greater than or equal to zero, and k is greater than or equal to zero and where i plus j plus k equals one.” Dkt. No. 129, Pg ID 7077-78. Everlight contends that Dr. Schubert’s testimony was wrong to reduce that term to a “gallium-nitride” semiconductor when he testified:

So I would say this lengthy formula is maybe a formal way of expressing the formula or the chemical formula, it’s formal, it’s comprehensive, it’s complete, but a person may just say gallium nitride-based. And gallium nitride-based is more informal, it’s more what people in the industry say. That’s a difference, but it means the same thing.

EL Mtn., Pg ID 44717. Everlight’s argument is undercut by its own expert’s testimony, as Dr. Bretschneider likewise testified that “it’s a gallium nitride-based semiconductor, that’s how we talk about them in the industry.” Nichia Resp., Pg ID 46463. Accordingly, the Court is not persuaded by Everlight’s argument that Dr. Schubert “ignore[d] that the limitation in question is a specific formula covering a specific range of semiconductor compositions . . .” EL Mtn., Pg ID 44717.

For the reasons set forth above, particularly when drawing all reasonable inferences in favor

of Nichia (as the Court must for purposes of this motion), the Court must presume the jury found that claims 2 and 3 are entitled to foreign priority; in fact, the Court must presume that the jury found that claims 2 and 3 are entitled to that priority as of July 29, 1996 (*i.e.*, the filing date of JP1). Based on that conclusion, neither the Nakamura SPIE reference nor the Schlotter reference could constitute prior art. As the Court must treat those references as not being prior art, the Court finds there is no basis for finding the ‘925 Patent invalid as anticipated. Accordingly, the Court denies Everlight’s Motion for JMOL Regarding Anticipation of Claims 2 and 3.

**D. Nichia’s Motion for JMOL of Validity and/or for a New Trial**

A party challenging the validity of a patent has the burden of proving that the patent is invalid by clear and convincing evidence. *Microsoft Corp. v. i4i Ltd. P’ship*, \_\_ U.S. \_\_, 131 S. Ct. 2238, 2240 (2011).

At the outset, the Court notes that much of Nichia’s argument relies on a finding that Everlight failed to provide a person of skill in the art (“POSA”) to support Everlight’s obviousness defense. As discussed below, however, the Court concludes that substantial evidence in the record supports a finding that Dr. Bretschneider was a POSA, at least under the definition of POSA that Everlight proffered (through Dr. Bretschneider). *See, e.g.*, Dkt. No. 583, Pg ID 49691-82. Moreover, although Everlight did not cite to expert testimony to rebut several points made by Nichia, such failure does not alter the existence of substantial evidence to support Everlight’s obviousness defense. Finally, the Court also finds that much of Nichia’s motion is simply an attempt to reargue, and have the Court weigh, the evidence. Such an undertaking is not an appropriate avenue for this Court to pursue, however, because the Court does not have the authority to usurp the factual findings of the jury if such findings are supported by substantial evidence.

1. *Obviousness as it Relates to Claims 2, 3 and 5 of the ‘925 Patent*

Obviousness under 35 U.S.C. § 103 is a question of law based on underlying facts. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17 (1966). The underlying factual inquiries are: (1) the scope and content of the prior art, (2) the differences between the claimed invention and the prior art, (3) the level of ordinary skill in the art, and (4) objective indicia of nonobviousness, including such secondary considerations as commercial success, long felt but unsolved needs, and the failure of others. *Id.* at 17-18. See also *Insite Vision, Inc. v. Sandoz, Inc.*, 783 F.3d 853, 858 (Fed. Cir. 2015). “While factual issues may be decided by the jury, the judge remains the “ultimate arbiter on the question of obviousness.” *Railroad Dynamics, Inc. v. A. Stucki Co.*, 727 F.2d 1506, 1515 (Fed. Cir. 1984). “When a jury has found a claim to be obvious, [the Federal Circuit] presumes the jury resolved all factual disputes in favor of the verdict.” *Pregis Corp. v. Kappos*, 700 F.3d 1348, 1354 (Fed. Cir. 2012) (citation omitted). And, while a court must defer to the jury’s factual findings when presented with a JMOL motion, the court must nonetheless review the factual findings for substantial evidentiary support and the ultimate conclusion on obviousness for legal correctness. *Railroad Dynamics*, 727 F.2d at 1513. Thus, courts “review[] a jury’s conclusions on obviousness *de novo*, ‘and the underlying findings of fact, whether explicit or implicit in the verdict, for substantial evidence.’” *Pregis Corp.*, 700 F.3d at 1354 (citation omitted). For purposes of the instant motion, the key question for purposes of obviousness is whether it would have been obvious to combine a blue InGaN LED with a yellow YAG phosphor based on the disclosures in prior art. *Cohesive Techs., Inc. v. Waters Corp.*, 543 F.3d 1351, 1363-64 (Fed. Cir. 2008) (citation omitted).

Nichia moves the Court to amend its judgment finding claims 2, 3 and 5 of the ‘925 Patent and claims 2, 14 and 19 of the ‘960 Patent invalid as obvious for the following reasons:

- a. There is no evidence YAG was used in any LED, much less a blue LED; rather, it was only used in unrelated applications such as mercury vapor lighting;
- b. Dr. Bretschneider's reasons for combining disparate art were conclusory and unsupported;
- c. Dr. Bretschneider ignored that much of the prior art relied upon would discourage a POSA from combining the references, and Dr. Bretschneider was not a POSA; and
- d. Dr. Bretschneider's conclusory testimony on secondary considerations failed to rebut the presumption of nonobviousness.

Nichia contends that none of the prior art relied on by Everlight taught the use of YAG in an LED, blue or otherwise. Nichia also argues that the literature relied upon by Dr. Bretschneider: (1) related to the use of YAG in mercury vapor lamps to adjust tone or temperature of already white light (the '283 Philips patent and the Hoffman article), (2) described the discovery and characterization of YAG but did not disclose its use in LEDs (the two Blasse & Bril articles), and (3) did not show a gradient of phosphor, as Dr. Bretschneider suggested (the '959 application).

Everlight counters that the jury's findings that Claims 2, 3 and 5 of the '925 Patent were obvious are supported by substantial evidence. Everlight contends, in particular, that: (a) both blue InGaN LEDs and YAG phosphors were well-known in the prior art, and (b) a POSA would have been motivated to use a blue InGaN LED with a yellow YAG phosphor to make white light.

*a. Impact of Using YAG with LEDs*

Nichia argues that Everlight: (1) introduced no evidence that YAG was used in any LED, much less a blue LED, and (2) instead introduced only evidence that YAG was used in unrelated applications such as mercury vapor lighting. Everlight acknowledges that it did not produce evidence that YAG was used in an LED, but as Everlight argues, whether YAG was used in combination with an LED is relevant to invalidity for anticipation, not invalidity for obviousness.

*Cohesive Techs.*, 543 F.3d at 1364 (citation omitted) (“[t]he tests for anticipation and obviousness are different”). Everlight did, however, present substantial evidence that both YAG phosphors and blue InGaN LEDs were well known. For example, it offered evidence to show that, prior to 1996, YAG was used in conjunction with blue light sources, including cathode ray tubes, blue lasers and blue mercury vapor lamps, to make white light. EL Resp. at 5, Ex. B at 53-54; Ex. D at 1:39-42; Ex. E at 150; Ex. F at 2:42-60; Ex. G at 89.

Moreover, contrary to Nichia’s contention that such prior art was obscure, Everlight introduced evidence that such art was authored by researchers at Philips and General Electric, two of the largest lighting companies in the world, and Bell Labs, the largest private research company in the United States. EL Resp., Ex. H at 28. Likewise, substantial evidence was presented that: (a) blue LEDs became well known in the art prior to 1996 (in fact, as early as 1993), EL Resp., Ex. I and J; (b) it was known that blue LEDs could be combined with phosphors to change the color of light emitted by the LED, EL Resp., Ex. I, J, and K at 80-81; and (c) it has been known for over 300 years that mixing blue and yellow light results in white light. EL Resp., Ex. L at 118. Furthermore, in response to Nichia’s argument that a POSA would not look to art in the field of fluorescent/mercury vapor lamps to find YAG phosphor for use with the new blue LEDs, Everlight introduced evidence that YAG phosphors would not have been used with blue LEDs prior to 1996 because there were no commercially viable blue LEDs at that time. Thus, the evidence offered by Everlight in support of its argument showed the reasonableness of using YAG phosphors with other blue light sources when attempting to make white light before blue LEDs became commercially viable in 1996. As such, the Court is constrained to conclude that the jury was not persuaded by Nichia’s position that YAG would not have been known to a POSA at the time of the invention.

For the reasons set forth above, the Court concludes that the absence of prior art that taught the use of YAG in LEDs does not support a finding that the prior art could not teach the creation of white light LEDs by using blue LEDs and YAG phosphors.

*b. Combination of Disparate Art/Prior Art Would Not Discourage a POSA*

Nichia next argues that Everlight's evidence regarding motivation for a POSA to combine the prior art references was conclusory, contradicts the evidence in the record, and cannot support a finding of obviousness with respect to any of the Asserted Claims. "A party seeking to invalidate a patent on obviousness grounds must demonstrate by clear and convincing evidence that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so." *InTouch Techs. Inc. v. VGo Communs., Inc.* 751 F.3d 1327, 1347 (Fed. Cir. 2014) (citation omitted) (reversing a JMOL of invalidity due to obviousness because, among other deficiencies, the expert's opinions on motivation to combine were vague and conclusory). Merely demonstrating that each of the claim elements was known in the prior art is insufficient to support a finding of obviousness. *See KSR*, 550 U.S. at 418.

A "reason for combining disparate prior art references is a critical component of an obviousness analysis; 'this analysis should be made explicit.'" *InTouch Techs.*, 751 F.3d at 1351 (quoting *KSR*, 550 U.S. at 418 (arguments need to provide an "articulated reasoning with some rational underpinning" to make the asserted combinations)). *See also ActiveVideo Networks, Inc. v. Verizon Communs.*, 694 F.3d 1312, 1327-28 (Fed. Cir. 2012) (affirming JMOL of nonobviousness due to conclusory, factually unsupported expert testimony); *Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1373-74 (Fed. Cir. 2008) (affirming exclusion of vague and conclusory expert testimony

regarding obviousness and motivation to combine). Nonetheless, determining whether a motivation to combine exists requires “an expansive and flexible approach,” *KSR*, 550 U.S. at 415, that must “take account of the inferences and creative steps that a person of ordinary skill in the art would employ . . . [because] . . . [c]ommon sense teaches . . . that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *Id.* at 418, 420.

Specifically, Nichia contends that Dr. Bretschneider:

1. Relied on Baretz *vis a vis* mercury vapor lamps but such lamps emit light primarily in the UV region, not blue light, and YAG was not mentioned (re: claims 2, 3 and 5 of the ‘925 Patent).
2. Conclusorily stated that a POSA would look to combine Tadatsu with the Blasse & Bril articles, Hoffman or Philips (an opinion Nichia asserts was founded on the false premise that Tadatsu discloses making white light from blue LEDs) (re: claims 2, 3 and 5 of the ‘925 Patent).
3. Used an overly simplistic “snow globe” comparison regarding the concentration gradient with respect to claim 2 of the ‘960 Patent (and claim 14 of the same patent as it related to the prior art of seiving *vis a vis* controlled particle size distribution), explaining the “how” but not “why” for creating a concentration distribution in a finished LED component.
4. Failed to explain that Baretz and Tadatsu discourage the use of phosphors such as YAG (which is inorganic, unlike the organic phosphors Nichia states that Baretz teaches are most advantageous and desirable) or why a POSA would ignore the teachings of Tadatsu, who teaches the use of LEDs emitting UV light.
5. Erroneously relied on Philips and Hoffman as it relates to the creation of white light because they describe the use of YAG to modify already existing white light.
6. Should not have been motivated to combine LED art such as Baretz or Tadatsu with the YAG art Dr. Bretschneider identified because, as Dr. Craford testified, Dr. Craford would not look to the fields of CRTs or mercury vapor lamps, which were the predominant fields in which YAG-type phosphors were used at the time of the invention, in his LED work.

Everlight counters that it did introduce evidence that a POSA would have been motivated

to combine teachings regarding YAG and blue LEDs at that time. First, as discussed in Section III.D.1.a. above, evidence was introduced at trial regarding YAG research involving the combination of yellow light with blue light to make white light. More importantly, the Court finds that the following admitted evidence allowed the jury to find that a POSA would have the motivation to combine teachings regarding YAG and blue LEDs at the relevant time: (1) the undisputed fact that there was a large market demand for white LEDs; (2) in or about 1993, the blue InGaN LED was a revolutionary breakthrough that ended a 20-year effort to develop a commercially viable blue LED (EL Resp. Ex. I and J); (3) as Nichia's expert conceded, the development of a commercially viable blue LED "gave everyone the incentive to move forward to create a simple blue plus yellow LED that emits white light" (EL Resp., Ex. A, at 151-52); (4) there were a limited number of yellow phosphors that could be used with a blue LED to make white light (EL Resp., Ex. A at 138-39) and Nichia does not dispute that YAG was one of those limited potential phosphors; and (5) YAG's properties, including excitation by blue light sources and resistance to harsh operating conditions, were well known, thereby making YAG an obvious choice for combination with blue LEDs (El Resp., Ex. G at 91). Further, as Dr. Schubert stated, once the blue LED was developed, development of the white LED was "unstoppable." EL Resp., Ex. A at 153. Therefore, the Court finds that it was possible for the jury to conclude, as Everlight argues, that "[t]he combination of familiar elements according to known methods' did 'no more than yield predictable results.'" *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007). Or, as stated in KSR, "[w]hen . . . there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp." *KSR*, 550 U.S. at 421.

The Court also finds that evidence at trial allowed the jury to conclude that a POSA would

pursue and find that a combination of a blue InGaN chip and a yellow YAG phosphor did not yield unpredictable results but actually converted blue light in the LEDs in the same manner as in other blue light sources. *Id.* at 417 (“if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond that person’s skill.”). The Baretz patent filed March 26, 1996, is an example of the prior art references that provide explicit teachings to use a blue LED with a yellow phosphor to make white light. *See* EL Resp., Ex. I. Though Baretz relied on mercury vapor lamps and inorganic phosphors to make white light, *id.* at Pg ID 46166, Baretz also disclosed mixing a blue LED with a yellow inorganic phosphor. *Id.* at Pg ID46168 (stating that “an LED operative to emit, for example, monochromatic blue . . . is packaged along with . . . inorganic fluorescers and phosphors . . . which appear as white light.”).

Further, in support of showing that claim 5 requires two phosphors, Everlight notes that Blasse taught the use of multiple YAG phosphors, EL Resp., Ex. C, and Baretz teaches “mixtures” of the phosphor components. EL Resp., Ex. I at Pg ID 46169. Nichia also erroneously argues that Baretz did not teach the use of inorganic phosphors such as YAG. The Baretz patent clearly stated that a blue LED “is packaged along with fluorescent organic and/or inorganic fluorescers and phosphors.” EL Resp., Ex. I at 46168 (emphasis added). In addition, in 1977, Hoffman taught that YAG is strongly excited by “436-nm Hg radiation,” *i.e.*, blue light from a mercury vapor lamp. EL Resp., Ex. G at 91. Similarly, Nichia’s reliance on Dr. Crawford’s testimony as the definitive and/or only possible finding of obviousness is misplaced. Dr. Crawford testimony does not alter the fact that the jury was presented with substantial evidence that supplied a factual basis for finding invalidity due to obviousness, particularly as it related to motivation to combine a blue LED with a YAG

phosphor.

For the reasons set forth above, the Court concludes that: (1) there was substantial evidence introduced to support Dr. Bretschneider's reasons for combining disparate art, and (2) Nichia has not established as a matter of law that the prior art would discourage a POSA from combining the references.

c. *Dr. Bretschneider as a POSA*

Nichia also contests the relevancy of Dr. Bretschneider's testimony because he was not, Nichia argues, a POSA at the time of conception and does not have the ability to testify about what the knowledge of a POSA was in 1996. Relying on *Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1377-78 (Fed. Cir. 2012); *Disney Enters., Inc. v. Kappos*, 923 F.Supp.2d 788, 799 (E.D. Va. 2013) (finding an expert must be a POSA or acquire such knowledge through later diligence). Nichia's concedes that "Nichia and Everlight presented different definitions of a POSA" (Nichia Mtn., Ex. A at 42-44 and Ex. D at 37), but Nichia argues that Dr. Bretschneider was not a POSA in 1996 under either proposal, nor did he offer any testimony regarding later efforts to acquire the knowledge of a POSA as of 1996.

The Court disagrees. Through Dr. Bretschneider, Everlight offered evidence that a POSA is "a person with a Bachelors degree in engineering, chemistry or physics, with four to five years experience working in the LED field, or an advanced degree, such as a Masters or Ph.D. in engineering, physics or chemistry, with little to no experience working with LEDs." EL Resp., Ex. K at 37. Dr. Bretschneider testified that he met this definition in 1996 because he had a bachelor's degree in chemical engineering and had been working in the LED field for over seven years. EL Resp., Ex. H at 35, 126, Ex. Q. Nichia contends that, even under Everlight's definition of POSA,

a person must have “industry” experience. As Dr. Bretschneider testified, however, a POSA needed to have “experience working in the field,” not “industrial experience or commercial experience.” EL Resp., Ex. H. at 70, 126. The Court thus finds it was within the province of the jury to determine whether Nichia’s or Everlight’s definition of POSA was appropriate. Further, if the jury accepted Everlight’s definition of POSA, it was within the province of the jury to determine whether a POSA needed “experience working in the field” or “industry” experience. For these reasons, the Court finds that there was substantial evidence presented from which the jury could find that Dr. Bretschneider was a POSA in 1996.

The Court also finds that a jury could have rejected Nichia’s claim that Dr. Bretschneider did not acquire the knowledge of a POSA through diligence because Everlight offered substantial evidence to the contrary. *Kappos*, 923 F.Supp. 2d at 799. Specifically, Dr. Bretschneider testified that he had studied over 150 prior art references and applied his knowledge of all of those references to the claims at issue. EL Resp., Ex. H at 50, 56.

*d. Secondary Considerations*

Nichia relentlessly argues that Everlight failed to rebut Nichia’s substantial evidence of secondary indicia of nonobviousness, specifically commercial success. As the Federal Circuit has recognized, secondary considerations must be considered and “evidence of secondary considerations may often be the most probative and cogent evidence in the record.” *Eurand, Inc. v. Mylan Pharms., Inc.*, 676 F.3d 1063, 1075-76 (Fed. Cir. 2012) (citations omitted) (emphasis added). Nichia asserts that, because it submitted evidence of secondary considerations, Everlight had the burden to prove by clear and convincing evidence that the patent is invalid in spite of such considerations. *Id.* In Nichia’s words, it “introduced an overwhelming amount of evidence of secondary considerations

of non-obviousness [at trial,] including the testimony of three fact witnesses (two of whom were third parties) and two experts” with respect to commercial success, long felt unmet need, failure of others, unexpected results, praise, and copying. Nichia also frequently asserts that Everlight fails to offer evidence regarding secondary considerations and relies only on conclusory statements from its expert and attorney argument on cross-examination.

In support of its position that the patents-in-suit enjoyed great commercial success, Nichia contends that it showed, through the testimony of Dr. Craford and Dr. Schubert, that sales of white LEDs made from a blue LED and YAG phosphor “achieved large success from the very beginning.”<sup>3</sup> Nichia also contends that it submitted significant evidence of: (a) praise through Dr. Doxsee and licenses taken by competitors, namely the licenses to Citizen Electronics, Osram, Philips Lumileds, and others, (b) testimony of Dr. Schubert regarding long felt unmet need, and (c) the unexpected results that led to white LEDS since “[i]t was a use of phosphor outside the conventional domain of application and . . . operation.” Nichia asserts it has established a prima facie case of nexus because its products that are commercially successful also practice the protected invention and are coextensive with it. Citing *Crocs, Inc. v. Int'l Trade Comm'n*, 398 F.3d 1294, 1310-11 (Fed. Cir. 2010).

Everlight counters that Nichia ignores two critical matters when arguing that secondary considerations dictate a finding of nonobviousness. First, and most significantly, the jury was presented with evidence regarding Osram’s near simultaneous development of white LEDs made

<sup>3</sup>Nichia contends that its evidence of commercial success from the beginning shows the fallacy in Everlight’s theory that huge success over time was caused by improvements and, as such, is entitled to judgment as a matter of law. As discussed below, however, the Court finds that Everlight did introduce evidence to support its theory that the huge success over time was the result of improvements. Therefore, that issue also was one for the jury to decide and not one for the Court to decide as a matter of law.

with YAG phosphor. As stated by Everlight, the “evidence showed Osram independently developed white LEDs using YAG within weeks of Nichia.” EL Resp., Pg ID 45919. *See also* EL Resp., Ex N (showing article was received February 6, 1997) and Ex. O (patent application date of September 20, 1996); Ex. H at 16-17, 132-34; Ex. A at 99. The Court finds that such documents, standing alone, may constitute substantial evidence to support a finding of invalidity due to obviousness. *See Geo. M. Martin Co. v. Alliance Mach. Sys. Int'l LLC*, 618 F.3d 1294, 1305 (Fed. Cir. 2010) (“Independently made, simultaneous inventions, made ‘within a comparatively short space of time,’ are persuasive evidence that the claimed apparatus ‘was [obvious]’”).

Second, although Nichia presumed that the jury accepted Nichia’s secondary considerations evidence, such a presumption is erroneous for purposes of this motion—a motion filed by Nichia. The correct presumption is that the jury found in Everlight’s favor with respect to each of the secondary considerations, namely the showing of the critical nexus between any secondary considerations and the claimed invention. *Pregis*, 700 F.3d at 1354. The Court finds that evidence was introduced that, before white LEDS were commercially viable, substantial gains in efficiency transpired. *See, e.g.*, EL Resp., Ex. K at 150-52. In fact, Nichia’s sales data reflects as much; specifically, evidence was offered that: (1) Nichia’s sales increased from were \$2-3 million in U.S. and \$16 million worldwide in 1998 to \$180 million in the U.S. and \$2 billion worldwide in 2012, and (2) Nichia’s annual sales growth rate was 36% in the U.S. and 42% world worldwide through 2012. Nichia’s Mtn. at 15, n.13. Thus, although the evidence can be interpreted as demonstrating that Nichia enjoyed great commercial success from the beginning, the evidence could also be interpreted as showing that sales increased as the products became more efficient based on the substantial increase in sales.

The Court also finds that evidence was introduced that undermined and/or contradicted some of the praise relied on by Nichia. Most notably, Nichia's expert, Dr. Craford, was not even aware that one award existed and another award, the 2004 award for a "Warm White LED," was not even given in recognition of the claimed invention of blue LED and YAG phosphor alone. Rather, the 2004 award recognized an invention that also required "newly developed red phosphor" to function. EL Resp., Ex. M at 62, Ex. W. Likewise, substantial evidence was presented that supports the conclusion that the licenses granted by Nichia should not be given any weight as a secondary consideration of nonobviousness. For example, according to Nichia's witness, Dr. Doxsee, at least three of the six licenses Nichia identified were the result of settlement agreements, each of which could have "easily" saved the licensee as much as ten million dollars in litigation costs. EL Resp., Ex. M at 44. Such evidence could be interpreted as showing that the licenses were executed primarily to avoid litigation costs. Evidence also was introduced that Dr. Craford works for Philips, a company that paid nothing to Nichia for the technology and agreed to cooperate and share patents with Nichia. EL Resp., Ex. M at 86-87, Ex. S at 20. Once again, the fact that the evidence could be interpreted in the manner Nichia desires is irrelevant because there is substantial evidence to support a competing interpretation.

Therefore, for the reasons set forth above, the Court finds that substantial evidence existed to allow the jury to find that secondary considerations favored Everlight rather than Nichia.

*e. Conclusion*

For the foregoing reasons, the Court concludes that substantial evidence supported the jury's finding that claims 2, 3 and 5 of the '925 Patent are invalid due to obviousness. Accordingly, the Court denies Nichia's Motion for JMOL of Validity for nonobviousness as it relates to claims 2, 3

and 5 of the ‘925 Patent.

*2. Obviousness as it Relates to Claims 2, 14 and 19 of the ‘960 Patent*

As Everlight points outs, the ‘960 Patent is not limited to a YAG phosphor; rather, it claims a blue LED with any yellow-emitting phosphor—with limitations regarding the concentration of the phosphor (claim 2) and the particle size distribution of the phosphor (claims 14 and 19). The Court notes that Nichia’s motion devotes little attention to the ‘960 Patent, specifically. As to the issue of particle size distribution, Nichia’s expert stated that sieving was the only means for controlling particle size distribution under that patent. EL Resp., Ex. A at 14-15. At trial, however, Everlight submitted evidence that controlling particle size through sieving was well known in the prior art, something that is not challenged in Nichia’s motion. EL Resp., Ex. AA at Pg ID 46350, Ex. BB at Pg ID 46357, Ex. CC at Pg ID 46363, Ex. DD at Pg ID 46374, Ex. EE at Pg ID 46381.

Nichia also argues that, as to claim 2 of the ‘960 Patent, the JP-959 Patent does not show a phosphor gradient. At trial, however, Everlight presented evidence that: (1) Figure 1C of the JP-959 Patent discloses the exact phosphor gradient claimed by the ‘960 patent, and (2) the text of that patent “states that the phosphor is dispersed in the resin and the phosphor ‘settles downward’ and ‘is concentrated.’” EL Resp., Ex. FF at Pg ID 46384-85, 46388.

With respect to motivation to combine, Nichia’s arguments regarding the ‘960 Patent are the same as for the ‘925 Patent, except that Nichia argues that “[n]one of the prior art used by Everlight at trial provides any motivation for creating a concentration distribution.” At trial, however, Dr. Bretschneider testified that “Baretz gives you some clear indications that you need to look at your phosphor and know how it behaves and then decide where you put the phosphor. And the ‘959 patent gives you some very clear, easy ways to make that happen.” EL Resp., Ex. K at 115. One of

those ways is to locate the phosphor either close to the LED chip or near the surface of the resin. EL Resp., Ex. I at Pg ID 46169. Further, as noted above, the evidence revealed only three choices for the distribution of phosphor: (1) a uniform phosphor distribution, (2) a phosphor concentration near the chip, and (3) a phosphor concentration near the top surface of the resin.

Nichia's arguments for the balance of the *Graham* factors regarding the '960 Patent are the same as for the '925 Patent. For the reasons discussed in Section III.D.1., the Court finds that those factors do not aid in Nichia's request for relief from judgment of invalidity of claims 2, 14 and 19 of the '960 Patent due to obviousness.

For the reasons stated above, the Court finds that substantial evidence supported the jury's finding that claims 2, 14 and 19 of the '960 Patent are invalid due to obviousness. Accordingly, the Court denies Nichia's Motion for JMOL of Validity for nonobviousness as it relates to claims 2, 14 and 19 of the '960 Patent.

### *3. Enablement of Claims 14 and 19 of the '960 Patent*

Nichia also moves the Court to enter judgment as a matter of law with respect to Everlight's defense that claims 14 and 19 of the '960 Patent are invalid due to a lack of enablement. Nichia argues that Everlight did not present any evidence of the peak wavelength of Mr. Noguchi's samples but instead misled the Court and the jury with "dominant wavelength" and x,y values, which Nichia argues were not peak wavelength. Nichia Reply, Pg ID 49685. Nichia also contends that Everlight failed to prove that no method described in the '960 Patent or known to a POSA could achieve the claimed range without undue experimentation.

#### *a. The Law*

Enablement is a question of law based on underlying facts, and Everlight must prove its

defense of lack of enablement by clear and convincing evidence. *See AK Steel Corp. v. Sollac*, 344 F.3d 1234, 1238-39 (Fed. Cir. 2003); *Invitorgen Corp. v. Clontech Labs*, 429 F.3d 1052, 1070 (Fed. Cir. 2005).<sup>4</sup> 35 U.S.C. § 112 requires that the specification of a patent teach those skilled in the art how to make and use *the full scope of the claimed invention* without ‘undue experimentation.’” *In re Wright*, 999 F.2d 1557, 1561 (Fed. Cir. 1993) (emphasis added). “Although the ultimate determination of whether one skilled in the art could make and use the claimed invention without undue experimentation is a legal one, it is based on underlying findings of fact.” *Warner-Lambert Co. v. Teva Pharmas. USA, Inc.*, 418 F.3d 1326, 1336-37 (Fed. Cir. 2005). Where a patent claims a range, the failure to enable one end of a claimed range can result in a finding of nonenablement. *Sollac*, 344 F.3d at 1244. With respect to ranges, however, only “reasonable enablement of the scope of the range” is required. *Id.* Moreover, a claim is not necessarily invalid if some of the claimed combinations are inoperative. *Atlas Powder Co. v. E. I. du Pont de Nemours & Co.*, 750 F.2d 1569, 1576-77 (Fed. Cir. 1984); *see also In re Cook*, 58 C.C.P.A. 1049, 1056 (C.C.P.A. 1971); *In re Dinh-Nguyen*, 492 F.2d 856, 858-59 (C.C.P.A. 1974).<sup>5</sup>

The Court echoed this law in its jury instructions, wherein it stated that a claimed range is deemed enabled if “at the time of the original filing[, such range is reasonably enabled] without having to conduct undue experimentation.” Instruction No. 12; *Sollac*, 344 F.3d at 1238-39. But,

<sup>4</sup>As with obviousness, the evidence concerning enablement must be from the perspective of a POSA. *Alcon Research Ltd. v. Barr Labs., Inc.*, 745 F.3d 1180, 1188 (Fed. Cir. 2014); *Wright Asphalt Prods. Co., LLC v. Pelican Ref. Co., LLC*, 2012 U.S. Dist. LEXIS 73901, \*27 (S.D. Tex. May 29, 2012) (witness who is not a POSA cannot provide competent testimony as to enablement).

<sup>5</sup>The law of the Federal Circuit’s predecessor, the Court of Customs and Patent Appeals (C.C.P.A.), was expressly adopted by the Federal Circuit in *South Corp. v. United States*, 690 F.2d 1368, 1370 (Fed. Cir. 1982) (*en banc*).

“[a] claim is not necessarily invalid for failure to meet the enablement requirement merely because some of the claimed combinations or parts of the ranges are inoperative.” Instruction No. 12. However, a jury’s verdict of no enablement should be upheld “as long as the factual showing is sufficient to justify the jury’s conclusion on the highly factual issue of whether, under all the circumstances, more than routine experimentation was needed to make the invention work.”

*Northpoint Tech., Ltd. v. MDS Am., Inc.*, 413 F.3d 1301, 1310 (Fed. Cir. 2005).

#### b. Analysis

Nichia asserts that claims 14 and 19 of the ‘960 Patent are enabled as a matter of law and that the Court should amend its judgment finding that claims 14 and 19 of the ‘960 Patent were invalid as not enabled. Nichia argues there is no evidence of lack of enablement of the “peak wavelength” claim limitation. Nichia further argues Everlight offered no evidence to support its contention that the inventors did not enable a peak wavelength as high as “around . . . 600nm,” nor did Everlight prove that various data points from Mr. Noguchi’s notebook on a chromacity diagram show the peak wavelength of the phosphors or how such data points prove non-enablement of the peak wavelength range from 510 nm to 600 nm. Nichia then argues that Everlight also failed to address the undue experimentation requirement correctly, first by suggesting that the entire range of wavelengths must be enabled and, second, by failing to offer evidence regarding the eight *Wands* factors. See *In re Wands*, 858 F.2d 721, 737 (Fed. Cir. 1988).

The Court finds, however, that Everlight presented evidence at trial that the ‘960 Patent does not enable the making of phosphors with peak wavelengths above 580 nm and up to 600 nm without undue experimentation. Significantly, Dr. Schubert admitted that the peak wavelength for Example 5 of the ‘960 Patent was 580 nm, EL Resp., Ex. A at 78, 83, 86-87, and Nichia’s experiments using

GD substitution showed as much. As such, claims 14 and 19 are invalid because they don't enable one end of the claimed range. *See, e.g., Sollac*, 344 F.3d at 1244; *In re Wright*, 999 F.2d at 1561.

As the *Sollac* court stated:

However, as part of the *quid pro quo* of the patent bargain, the applicant's specification must enable one of ordinary skill in the art to practice the full scope of the claimed invention. *Wright*, 999 F.2d at 1561. That is not to say that the specification itself must necessarily describe how to make and use every possible variant of the claimed invention, for the artisan's knowledge of the prior art and routine experimentation can often fill gaps, interpolate between embodiments, and perhaps even extrapolate beyond the disclosed embodiments, depending upon the predictability of the art. *See Genentech, Inc. V. Novo Nordisk A/S*, 108 F.3d 1361, 1366 (Fed. Cir. 1997) ("[A] specification need not disclose what is well known in the art."); *see also Wands*, 858 F.2d at 736-37 ("Enablement is not precluded by some experimentation, such as routine screening."). ***But it does mean that, when a range is claimed, there must be reasonable enablement of the scope of the range.***

*Sollac*, 344 F.3d at 1244 (emphasis added). As discussed above, Everlight introduced evidence that there was not reasonable enablement of the upper end of the range.

As to the *Wands* factors, the record reflects that Dr. Bretschneider discussed the undue experimentation factors when testifying about this limitation. EL Resp., Ex. H at 17-22. Although that discussion may not have been extensive, the fact remains that Dr. Bretschneider did address the *Wands* factors. Everlight also introduced evidence that the inventors failed in attempting to make the phosphors within the claimed range. *Id.* at Ex. HH at 2, Ex. GG at 42. The inventor's failed attempts to make embodiments of the invention constitutes "strong evidence that the patent specification lacks enablement." *Ormco Corp. Align Tech., Inc.*, 498 F.3d 1307, 1318-19 (Fed. Cir. 2007).

Therefore, for the reasons stated above, the Court concludes that there was substantial evidence in the record from which the jury could have found a lack of enablement with respect to claims 14 and 19 of the '960 Patent. Accordingly, the Court denies Nichia's Motion for JMOL of

Validity based on enablement as it relates to claims 14 and 19 of the ‘960 Patent.

*4. New Trial*

Nichia alternatively moves the Court to grant a new trial on invalidity because the Verdict Form was prejudicial against Nichia for two reasons: (a) invalidity and infringement were tied together on the Verdict Form, and (b) the Verdict Form inappropriately motivated the jury to find invalidity to avoid having to make infringement findings on approximately 3,100 items. Plaintiff also seeks a new trial on any infringement issue that the Court denied judgment in favor of Nichia as a matter of law. The Court notes that neither of those two arguments suggest that the questions on the Verdict Form tended to “mislead or confuse the jury, or . . . inaccurately frame[d] the issues to be resolved by the jury.” *Chirco*, 2008 U.S. Dist. LEXIS 29764, at \*\*24-25.

In addition, prior to the Court reading the jury instructions and giving the jury the Verdict Form, the Court addressed and rejected Nichia’s contention that the Verdict Form inappropriately motivated the jury to find invalidity to avoid having to make infringement findings on approximately 3,100 items. For the same reasons set forth by the Court on the record on April 20, 2015, *see EL Resp., Ex. S at 98-103*, the Court is not persuaded by Nichia’s argument in pursuit of a new trial. Finally, as the Court concluded in Section III.B. above, Nichia’s contention that it was improper to preclude the jury from making a finding on infringement once the jury concluded the patents were invalid is not supported by applicable law. Therefore, the Court rejects Nichia’s argument that it was prejudiced by invalidity and infringement being tied together on the Verdict Form.

Accordingly, for the reasons set forth above, the Court denies Nichia’s motion for a new trial.

#### **IV. CONCLUSION**

For the reasons stated above,

- A. Nichia's Motion for Judgment as a Matter of Law of Infringement [#525] is DENIED;
- B. Everlight's Motion for Judgment as a Matter of Law Regarding Anticipation of Claims 2 and 3 of the '925 Patent [#554] is DENIED; and
- C. Nichia's Motion for Judgment as a Matter of Law of Validity and/or for a New Trial [#556] is DENIED.

SO ORDERED.

Dated: January 19, 2016

/s/ Gershwin A. Drain

GERSHWIN A. DRAIN

UNITED STATES DISTRICT JUDGE

CERTIFICATE OF SERVICE

Copies of this Order were served upon attorneys of record by electronic and/or ordinary mail.

/s/ Felicia Moses for Tanya Bankston  
Case Manager